

REMARKS

Claims 1-19 are pending in the present application. Claims 1-17 and 19 stand rejected under 35 USC § 103(a). Claims 1-19, further, stand rejected under 35 USC § 112, second paragraph. Claim 18 is objected to but otherwise allowable. Claims 1, 4, 8, 10, 12, 13, and 18 have been amended.

The Applicants appreciate the Examiner's thorough examination of the subject application and respectfully request reconsideration of the subject application based on the following remarks.

35 U.S.C. § 112, SECOND PARAGRAPH REJECTIONS

The Examiner has rejected claims 1-19 under 35 USC 112, second paragraph as being indefinite. In view of the amendments to the claims, the Applicants believe that, the grounds for rejection are moot.

35 U.S.C. § 103(a) REJECTIONS

The Examiner has rejected claims 1-11, 15, and 17 under 35 USC 103(a) as unpatentable over Japanese Laid-Open Patent Application Number 2000-128031 to Satoshi ("Satoshi" or the "Satoshi Reference") in view of U.S. Patent Application Publication Number 2004/0085447 to Katta, et al. ("Katta" or the "Katta Reference"); claims 12-14 and 19 under 35 USC 103(a) as unpatentable over Satoh in view of Katta, further in view of U.S. Patent Number 4,772,942 to Tuck, et al. ("Tuck" of the "Tuck Reference"); and claim 16 under 35 USC 103(a) as unpatentable over Satoh in view of Katta, further in view of U.S. Patent Number 6,314,364 to Nakamura ("Nakamura" of the "Nakamura Reference"). The Applicants respectfully traverse the grounds for rejection based on the above amendments and the following remarks.

Claims 1, 3, and 9

The Examiner admits that, the Satoshi reference does not disclose a display control section capable of displaying simultaneously or selectively a panoramic image and a perspective image (claim 3) and/or displaying the mobile body at a predetermined position of a displayed image on the display screen (claim 9).

The Examiner asserts, however, that, the Katta reference teaches a display control section having a display section that simultaneously or selectively displays a panoramic image and a perspective image. More specifically, the Examiner maintains that, switching unit 401 is capable of selecting one of six images that can include display of a panoramic and perspective images. For the reasons provided below, the Applicants respectfully disagree.

The Satoshi reference discloses an all-direction vision sensor ("HyperOmni Vision") 12 that is installed so that it can observe 360° around the vehicle as well as the driver. HyperOmni Vision 12 includes a hyperbolic mirror 8 that is mounted perpendicularly facing downward and a camera 4, which is mounted perpendicularly facing upward, whose visual line is aligned with the center axis of the hyperbolic mirror 8. The drive recorder further includes an A/D converter 40 that receivesreceiving analog signals from the camera 4, a monitor 48 that displays the image pictured, and a recording device 42. See, e.g., Satoshi, Abstract.

The Katta reference discloses an on-vehicle image display apparatus comprising a plurality of cameras, a display image creating means for composing and cutting out a group of images taken by the plurality of cameras, and an image display means, which removes images to compensate for blind spots in the plurality of cameras. See, e.g., Katta, Abstract.

According to the specification of the present invention and referring to FIG. 5, a panoramic image is a 360° round-shaped image 510 formatted in polar coordinates that is, first, transformed into a donut-shaped image 515 and, then, transformed into a rectangular image 520 using rectangular coordinates. See, e.g., Specification, page 38, line 22 to page 39, line 10. Referring to FIG. 6 and the specification, a perspective

transformation is a view of an object that is projected on some plane. More specifically, any point in three-dimensional space P^3 can be transformed to a rectangular coordinate $R(X, Y)$ on a round-shaped image 510 that is located at a focal distance F from the lens 218. Likewise, a square-shaped image having a width W and length h can be transformed to a rectangle in the same plane as the round-shaped image. See, e.g., Id., page 41, line 12 to page 45, line 10. In this condition, horizontal and vertical rotational movement of the perspective transformation is possible. See, e.g., Id., page 45, lines 12-14.

Neither of the cited references, however, teaches, mentions or suggest an image processor for transforming perspective image data and/or a display section for displaying a perspective image corresponding to the perspective image data as recited in claim 1. Specifically, the Satoshi reference only provides for a bird's-eye view and a panoramic view. There is no teaching or suggestion of transforming image data into perspective image data or displaying a perspective image corresponding to the perspective image data. Satoshi also fails to teach a display section that displays the perspective image transformed "from the bird's-eye image of the mobile body and the surrounds thereof".

Moreover, the "composite displays" shown illustratively in Katta FIGs. 4 and 6 are neither panoramic images nor perspective images; rather, they are merely a "cut-and-paste" composite image of multiple images from a plurality of cameras. There is no teaching or suggestion of transforming image data into perspective image data or displaying a perspective image corresponding to the perspective image data.

One skilled in the art, would not have found the teachings of Katta relevant to provide perspective and panoramic images using a hyperboloidal mirror. Nothing in Katta suggests combining the "cut-and-paste" composite image to provide either of a perspective image that can be panned or tilted to provide a variety of perspective views of the same image and/or a 360°-degree view of the surroundings of the moving vehicle. Absent a teaching, suggestion or mention to do so, the Examiner has not made a prima facie case of obviousness using the Satoshi and Katta references.

Claims 6 and 7

The Examiner further admits that, the Satoshi reference does not disclose an image processor that transforms image data corresponding to a second area within the omniazimuth view field area around the optical system which does not overlap with the first area into a second perspective image data which does not coincide with the first perspective image data (claim 6) or that the second area is identical to an area which is obtained by performing a least one of translational transfer processing and zoom-in/zoom-out processing on the first area.

However, notwithstanding that the Applicants assert that the Katta reference does not teach, mention or suggest perspective views or images, Figure 6 of the Katta reference clearly shows that Katta contemplates overlap of first and second areas. Accordingly, the Applicants respectfully assert that, neither Satoshi nor Katta teach, mention or suggest transformed image data non-overlapping first and second image data.

Claims 15 and 17

The Examiner finally admits that, the Satoshi reference does not disclose an image processor with memory that combines mobile body image data with the perspective image data transforms image data The Applicants, however, again assert that, neither the Satoshi reference not the Katta reference teach, mention or suggest displaying a perspective image of the surroundings of a moving vehicle.

Accordingly, it is respectfully submitted that, claims 1-11, 15, and 17 are not made obvious by Satoshi and Katta, and further, satisfy all of the requirements of 35 U.S.C. 100, et seq., especially § 103(a). Accordingly, the claims are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

Claims 12-14 and 19

Nor can the Tuck reference make up for the deficiencies of the Satoshi and Katta references. Indeed, the Tuck reference does not teach mention or suggest a display device for displaying one of a panoramic image corresponding to the panoramic image data and a perspective image corresponding to the perspective image data. Accordingly, it is respectfully submitted that, the claims are not made obvious by Satoshi, Katta, and Tuck, and further, satisfy all of the requirements of 35 U.S.C. 100, et seq., especially § 103(a). Accordingly, the claims are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

Claim 16

Nor can the Nakamura reference make up for the deficiencies of the Satoshi and Katta references. Indeed, the Nakamura reference does not teach mention or suggest a display device for displaying one of a panoramic image corresponding to the panoramic image data and a perspective image corresponding to the perspective image data. Accordingly, it is respectfully submitted that, the claim is not made obvious by Satoshi, Katta, and Nakamura, and further, satisfies all of the requirements of 35 U.S.C. 100, et seq., especially § 103(a). Accordingly, the claim is allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

Accordingly, it is respectfully submitted that, the claims, satisfy all of the requirements of 35 U.S.C. 100, et seq., especially § 103(a). Accordingly, the claims are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

If for any reason a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge or credit Deposit Account No. **04-1105**.

Respectfully submitted,

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